6. Save all your eggs in sets—that is, keep all the eggs each bird lays by themselves. This is the only way to form a correct knowledge of the eggs of any species, as a single egg, particularly of the blotched ones, frequently gives a very erroneous idea of the general markings—a very unsatisfactory representative of a set. For instance, in my collection are four eggs of the *Buteo lineatus*, found in the same nest, two of which are pure white and two blotched. It is not very uncommon to find great variations in markings in the same species and in the same nest.

7. Keep a memorandum of the place and date of collecting each set of eggs.

8. Use some kind of blowpipe in preparing your eggs for the cabinet. The common blowpipe, with the addition of a fine pointed tip, will answer ; yet it is a severe tax on the lungs and brain if you have many eggs to blow. I have many a time been dizzy and almost blind from overtaxing my lungs in this operation. Within a few years Mr. E. W. Ellsworth, of East Windsor Hill, Conn., has invented a blowpipe which is operated by the thumb and finger, which works very perfectly and expeditiously. I would not be without it on any account. After using it for a time, and then letting it remain unused until the leather packing becomes dry, the instrument does not work satisfactorily to those unaccustomed to it. The remedy is simple. Take off the blowpipe and work the instrument submerged in a bowl of warm soap suds, when the leather packing becomes pliable and works as well as new. I have used the same instrument for years, and it works to-day as well as when new, by following the above directions. The printed directions which accompany each instrument are intended to be a sufficient guide in case repairs are needed, and the maker can be referred to for any further information required.

SCIENTIFIC SERIALS

THE *Geological Magazine* for May (No. 95) opens with an important article (illustrated with a plate) on some coniferous remains from the Lithographic Stone of Solenhofen by Mr. Dyer, in continuation of a former paper on the same subject. This paper includes the description of a new species of *Pinites* (*P. solenhofenensis*), a revision of the genus *Athrotaxites*, with descriptions of two new species (*A. longirameus* and *A. ? laxus*), and a notice of a new genus, *Condylites*, probably belonging to the Cupressine group, and including a single new species, *C. squamatus*.—MM. H. B. Woodward and J. H. Blake communicate a valuable paper on the relations of the Rhætic beds to the Lower Lias and Keuper formations in Somersetshire, in which they cite additional evidence and arguments in support of the view that the Rhætic beds constitute true passage-beds between the Keuper and Liassic series.—Principal Dawson gives us the results of a new examination of the geological structure of Prince Edward's Island in the Gulf of St. Lawrence ; and Mr. Alfred Bell a paper on the succession of the Crags, the latter containing a criticism of Mr. Prestwich's recently-published memoirs on the same subject.—Mr. James Geikie communicates a sixth paper on changes of climate during the glacial epoch, and the number concludes with an interesting lecture on meteorites by Mr. David Forbes.

THE *Monthly Microscopical Journal*, No. 42, for June, completing the seventh volume, contains communications on "An Improved Reflex Illuminator for the Highest Powers of the Microscope," by W. H. Wenham ; on "A Silvered Prism for the Successive Polarisation of Light," by J. W. Stephenson ; "Structure of Battledore Scales," by J. Anthony, M.D., detailing fresh investigations by a new method of of illumination, the results of which confirmed those of a previous communication ; "Beale's Nerve Researches : the Reply of Dr. Beale to Dr. Klein ;" "On Bog-Mosses," by R. Braithwaite, M.D., part iv., devoted to *Sphagnum tenellum* Ehrh., and its varieties. This is the *S. molluscum* of Wilson's "Bryologia ;" "Crystallisation of Metals by Electricity," by Philip Braham ; "On the Means of Distinguishing the Fibres of New Zealand Flax from those of Manilla or Sizal, by the Microscope," by Captain Hutton. The average length and diameter of the ultimate fibres are held to be distinctive, as well as some other less important points, in the discrimination of these fibres. The residue of this number is occupied, as usual, with brief notices of new books, notes on microscopical subjects, and the proceedings of microscopical societies.

SOCIETIES AND ACADEMIES

LONDON

Geological Society, June 19.—Prof. Ramsay, V.P., in the chair.—The following communications were read :—1. "On *Trochocyathus anglicus*, a new species of Madreporaria from the Red Crag," by Mr. P. Martin Duncan, M.B., F.R.S. The author described a coral, of which a single specimen had been found in the Red Crag, in the grounds of Great Bealings Rectory, Norfolk. He stated that it belonged to the genus *Trochocyathus*, and was distinguished from the other species of that genus by its dense epitheca, its small and prominent columella, and its inverted calicular margin. He proposed to name it *Trochocyathus anglicus*, and stated that its nearest alliance is with the Australian Upper Tertiary form described by him under the name of *T. meridionalis*. Mr. Prestwich inquired whether the fossil bore any resemblance to any of the French Eocene forms, and whether there was any possibility of its being derivative. Prof. Duncan replied that the specimen was but little worn, and was therefore probably not *remanié*, though this point was not absolutely certain. 2. "On the Discovery of Palæolithic Implements in association with *Elephas primigenius* in the High-terrace Gravels at Acton and Ealing," by Colonel A. Lane Fox, F.G.S. The gravels in the neighbourhood of Acton have been divided by Mr. Prestwich into two principal groups—viz., the high-level gravels on the hills above the valley, and the valley-gravels on the sides and bottom of the valley itself. The valley-gravels have been again divided by Mr. Whitaker into three terraces—viz., a high terrace, between 50ft. and 100ft. above the Ordnance datum, a mid terrace, between 20ft. and 40ft. high, and a low terrace, at an average height of 10ft., occupying the low ground in the bends of the river. On both sides of the river the high terrace is separated from the mid terrace by a strip of the London Clay, which is laid bare at an average level of 50ft. The London Clay is also laid bare on the sides of the tributary streams running into the valley on both sides of the river, thus dividing the high-terrace gravel into patches. The mid terrace is continuous, and follows the sinuosities of the valley on both sides up to the strip of London Clay. The author accounts for this distribution of the gravels by supposing that a large body of water must at one time have stood at the 50-feet level, and the denudation of the high terrace have been caused by the waves beating on the sides of the valley, and by drainage into this body of water. The mid terrace he conceives may have been caused in part by accumulations beneath this body of water. The position of the high-terrace gravel at Acton corresponded so closely to that of the implement-bearing gravels of the Somme and the Ouse that the author was led to examine carefully the excavations made in it for the construction of houses. He discovered a number of implements of the drift-type, together with flakes and cores, and a few roughly-formed scrapers ; all these were found in close contact with the London Clay, and beneath the gravel. Fragments of fern (*Osmunda regalis*) and of wood (*Pinus sylvestris*) were also found with the implements at the same level. Two implements were found at Ealing Dean, two miles westward, on nearly the same level as those at Acton—viz., 90ft. ; and these also came from the bottom of the gravel. Another implement was found south of the river at Battersea Rise, in the same position above the strip of London Clay as at Acton, and at about 60ft. above the Ordnance datum. The implements are of the pointed and oval types. The only animal remains discovered in the high terrace consisted of a tooth of *Elephas primigenius* in the Acton gravel. The position of this the author believes to be reliable, although he did not discover it himself *in situ*. In the mid-terrace gravel a number of pits were examined between Shepherd's Bush and Hammersmith, and in the neighbourhood of Turnham Green, which resulted in the discovery, at the latter place, of a large quantity of animal remains (noticed by Mr. Busk in the following paper), all of which, like the implements of the high terrace, were at the bottom of the gravel ; but no evidence of human workmanship was found in the mid terrace. All these were found together, in the same seam of gravel, 12ft. beneath the surface, and all appeared to have been deposited at the same time. The surface was here 25ft. above the Ordnance datum, and consequently about 50ft. lower than the implements of the high terrace, 1½ mile to the north. The section across the valley, taken through the two places, here shows the strip of the London Clay intervening between the two terraces. The chief points of interest which the author submitted to the judgment of geologists consisted in the presence of drift implements in the high terrace, their absence in the mid terrace, and reappearance in the existing bed of the Thames; the great rarity or absence of animal remains in the high terrace, and their abundance in the mid terrace, and the occurrence of both implements and animal remains at the bottom of the gravel in both terraces. The writer concluded by adducing proofs of the great antiquity of the present river-bed, which it was shown must have run in its present meandering course in the bottom of the valley for at least 2,000 years. 3. "On the Animal Remains found by Col. Lane Fox in the High and Low-level Gravels at Acton and Turnham Green," by Mr. George Busk, F.R.S. The author described the mammalian bones referred to in the preceding paper. The remains from the high-level gravels at Acton belong to the genera *Bos*, *Ovis*, *Equus*, and *Elephas*? The greater part belong to the first-named genus, and are probably modern, as are also those of *Ovis*. The remains of *Equus* may be of greater antiquity. The other bones found may belong either to Elephant, Rhinoceros, or Hippopotamus; they include a large portion of an Elephant's molar, and are much rolled. The remains from the mid-level gravel at Turnham Green generally present the characters of great antiquity. They include bones of *Rhinoceros hemitœchus*, *Equus caballus*, *Hippopotamus major* (one of them the left frontal of a very young animal almost unworn), *Bos* (probably *B. primigenius*, and some perhaps *Bison priscus*), *Cervus* (*C. clactonensis*, Falc. = *C. Browni* Dawk., *C. elaphus*, and *C. tarandus*), *Ursus ferox priscus*, and *Elephas primigenius*. Mr. Prestwich complimented the author on the exactness and completeness of his description of the classical district which he had investigated, in which mammalian bones had been found and described by Mr. Trimmer so early as 1815. In that case Hippopotamus remains, very fresh and unworn, had also been discovered. Prof. Morris had also described a deposit near Brentford in which numerous remains of Reindeer were present, showing how variable was the distribution of mammalian remains even in a limited area, and how unsafe it was to base theories upon merely negative evidence. It was to be hoped that other investigators would extend similar discoveries to other parts of the valley of the Thames. Mr. Godwin-Austen did not think that the presence of the young Hippopotamus was absolutely conclusive of its having been born in this country. With regard to the presence of remains of Reindeer and Hippopotamus in the same beds, not only might there have been an overlapping of fauna such as has been pointed out by Sir Charles Lyell, but there also might be an intermingling of the included remains from two beds of different ages. He was not altogether satisfied with the evidence as to the coexistence of man with *Elephas primigenius*, nor as to the artificial character of some of the presumed implements. He did not attach any great importance to the merely fragmentary bones. Mr. Evans maintained that the implements exhibited were of necessity artificial, and commented on the nature of the evidence as to the coexistence of man with the Pleistocene fauna. Under any circumstances the gravels containing the implements could only have been deposited at a time when the Thames valley had not been excavated to anything like its present depth; and they were therefore of great antiquity. There was, moreover, a notable absence in them of a number of the animals usually found associated with Neolithic implements; and if man had not subsisted on the animals the remains of which were found associated with his handiworks in the gravels, it was a question on what food he had had to depend. The absence of implements in the low-level gravels seemed to him significant of a diminution in the number of the human beings who frequented the banks of the river. Mr. Carruthers said that as the rhizome, whether it was that of *Aspidium* or *Osmunda*, was an aërial, and not a subterranean rhizome, it must have been carried to its present position; and it consequently indicated, as Col. Lane Fox had pointed out, the direction of the stream. Mr. Flower regarded Col. Lane Fox's memoir as of great interest, as affording an additional instance of that perfect similarity of these deposits, whether in France or England, which in places so wide apart might reasonably be taken to indicate a common origin. It was indeed generally assumed that these deposits were brought down by rivers; but this, according to his view, was by no means certain. Col. Lane Fox had described the valley as 4½ miles wide; but there was at Croydon, 12 miles distant, a deposit of gravel capped with loess, containing elephant remains, and exactly resembling the Thames valley-gravels, and communicating with them. This evidently formed part of the Thames valley system, whatever that system might be taken to be; and if so, he thought it incredible that the loess should have been distributed by river-action over an area 12 or 15 miles in width. In conclusion, he was quite content to adhere to the opinion held by the French geologists, and formerly by several of our own most able writers, that the distribution of these superficial drifts was in the first instance diluvial rather than fluvial. Col. A. Lane Fox, in reply, pointed out the artificial character of the implements, and the manner in which the mammalian remains occurred. He thought that the lower terrace of gravel might have been formed at the bottom of a lake. Mr. Busk, in proof of the animal remains not having been brought from a distance, showed that the remains of the same animal were found in close proximity to each other. Prof. Ramsay made some remarks on the undoubtedly artificial character of the implements, and on their position at the base of the gravels. The origin of the Thames valley he had already maintained to be of Postmiocene age; and though there was at present no evidence of man's existence at that time, it was still possible. Of the extreme antiquity of the human race there could, however, be no doubt. 4. "On the Evidence for the Ice-sheet in North Lancashire and adjoining parts of Yorkshire and Westmoreland," by R. H. Tiddeman. The country of which the earlier glacial phenomena were described in this paper lies between the Lake-district on the north and the plains of South Lancashire and Cheshire on the south, and extends from the great watershed of England to the Irish Sea. On the west is a seaside plain rising to levels of less than 200 feet. On the north-east is a portion of the Pennine Chain, comprising Ingleborough, Pennigent, and other Fells, rising to heights of from 2,000 to 2,400 feet. Between these, from north to south, we pass over (1) a range of moorlands from 1,000 to 1,500 feet high, called the Rossendale Anticlinal, which forms the watershed between the basins of the Mersey and the Ribble; (2), the valley of the Burnley and Blackburn Coal-field, which drains north through gorges in (3) the Pendle chain of hills into (4) the broad valley of the Ribble; (5), a group of Fells rising to a general level of 1,800 feet, between the valleys of the Ribble and the Lune, called, for the purpose of this paper, "The Central Fells;" (6), north of this the valley of the Lune and the estuary of the Kent. The main direction of all these features between the seaside plain and the Pennine Chain, is from north-east to south-west. The paper was illustrated by a map of the district on the scale of 1 inch to a mile, coloured to represent elevations, the level contours having been reduced from the 6-inch scale. Upon this all the ice-scratches found on the solid rocks were inserted. A diagram illustrating the proportional number of scratches in different directions showed that 20 per cent. of them were due south, although the general direction of the valleys was to the south-west. An instance was mentioned of a ridge of 1,400 feet in height, which had scratches at the top running directly across it to the south, although no land of equal height occurred north of it within a distance of seven miles. A similar instance was shown to exist on the ridge north-east of Pendle Hill. A *roche moutonnée* in the gorge of the Calder at Whalley was shown to have been formed by ice working from the north, although the river drains from the south. Other systems of scratches were mentioned in detail. All these tended to show that, though the general slope and drainage of the district is to the south-west, the movement of the ice at the period of maximum cold was to the S. or S.S.E., or nearly parallel to the watershed. The author goes on to describe certain disturbances at the surface of the rocks, which are dipping at high angles to the south, they having been overturned by some force coming from the north. Such surface-disturbances are not found on rocks dipping to the north; and this fact may be explained by an illustration: in one case the brushing was with the nap, in the other against it. In was shown that these phenomena could not be attributed to any other agent but a great ice-sheet pushing on from its northern gathering grounds, recruited by the greater elevations on its course, but overriding the lesser, grinding down and smoothing by its friction rocks presenting but a gentle incline, tearing up and turning over the basset edges confronting its approach. The author next described the arrangement of the Till as to colour and material, and endeavoured to show that all the facts which he has observed are in favour of the existence of an ice-sheet travelling south in this district. Mr. Cumming's observations in the Isle of Man were considered to confirm these views. He describes the general glaciation of the island as being from the E.N.E. or Lake-country, and describes many large blocks of granite which had been carried from their parent rock up the high hill of South Barruh and down on the other side. This was referred by Mr. Cumming at the time to a great "wave of translation ;" but the facts are quite easily explained by an ice-sheet. Other observations of Mr. Cumming upon the drifts of the Isle of Man were taken by the author as confirmatory of his views. Mr. Morton's observations on the glaciation of the Mersey basin were touched upon ; and it was suggested that the glaciation of that district was produced by an ice-sheet, not coming from the south-east, as Mr. Morton holds, but working to the south-east from the Lake-country, and across a part of what is now the Irish Sea. Prof. Ramsay's observations on the glaciation of Anglesey being to the S.S.W. instead of from the Snowdon group, as might be expected, were considered by the author to be confirmatory of his views of a great ice-sheet having filled what is now the Irish Sea, and emptied itself by St. George's Channel on the one hand, and by the Cheshire plain on the other, as well as by some of the passes in the Pennine Chain.—5. "On the Mammalia of the Drift of Paris and its Outskirts." By Prof. Albert Gaudry, F.C.G.S. In this paper the author briefly indicated those mammals the remains of which have been discovered in the Pleistocene or Quaternary deposits of Paris and its vicinity. His list includes flint implements as evidences of the existence of man, and bones of the following species :—*Canis lupus*, *Hyæna crocuta* (*spelæa*), *Felis leo* (*spelæa*), *Castor trogontherium* and *fiber*, *Elephas primigenius* and *antiquus*, *Hippopotamus amphibius*, *Rhinoceros tichorhinus* (a Rhinoceros of doubtful species), *Sus scrofa*, *Equus asinus* and *caballus*, *Bos primigenius*, *taurus* (?), and *indicus* (?), *Bison priscus* and *europæus*, and *Cervus tarandus*, *Belgrandi*, *megaceros*, *canadensis* (?), *elaphus*, and a small species.

Zoological Society, June 18.—Mr. John Gould, F.R.S., vice-president, in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of May, 1872. The most noticeable of these were two Argus Pheasants (*Argus giganteus*), presented to the Society by Mr. J. G. Fanshawe.—Mr. P. L. Sclater exhibited a pair of Ceylonese birds sent to him for determination by Mr. W. Vincent Legge. These birds Mr. Sclater considered to belong to a new species of the genus *Prionochilus*, which he proposed to call *P. vincens*, after one of the names of its discoverer.—Mr. Edwin Ward exhibited the horns of a Barasinga Deer (*Cervus duvaucelii*) with twenty points, and a very handsome and peculiarly grown specimen of the Gaur or Indian Bison, from Central India. —Mr. St. George Mivart read a paper "On the Axial Skeleton of the Ostrich" (*Struthio camelus*).—Dr. J. Murie read a paper "On the Cranial Appendages and Wattles of the Horned Tragopan" (*Ceriornis satyra*). After alluding to the phenomena of display during courtship, he went on to show that rudimentary horns are found in the female. In the male the pseudo-horns are composed of firm fibro-elastic substance, and are not due to vascular erection. The wattle, on the contrary, is a true erectile vascular organ.—A communication was read from Prof. H. H. Giglioli, containing an account of the Cetacea observed during the voyage round the world of the *Magenta* in the years 1865–68. In this were contained descriptions of several new or little known species, and of a new genus and species of Fin-backed Whale, proposed to be called *Amphiptera pacifica*.—Dr. J. Murie continued the series of his observations on the Macaques, commenced at the last meeting. The species selected for special notice were *M. arctoides* of Is. Geoff., which he showed to be identical with *M. brunneus* of Anderson :—The Formosan or Round-faced Monkey (*M. cyclopis*), and the Japanese Monkey (*M. speciosus*). Points in the anatomy and skeleton of each of these species were described.—A communication was read from Dr. J. E. Gray, containing the description of the younger skull of Steller's Sea Bear (*Eumetopias stelleri*).—A communication was read from the Rev. O. P. Cambridge, giving descriptions of twenty-four new species of Spiders of the genus *Erigone*.—A second communication from Dr. J. E. Gray, F.R.S., contained additional notes on new corals from the Southern and Antarctic Seas.—A further communication from Dr. Gray contained additional notes on *Arctocephalus cinereus*, and on *Gypsophoca*, from the coast of New Zealand.—Mr. A. H. Garrod read a description of the tongue of *Nestor hypopolius*, which showed that *Nestor* does not belong to the Trichoglossine group of Psittacidæ.

Mathematical Society, June 13.—Mr. W. Spottiswoode, Treas. R.S., president, in the chair. Prof. Cayley, vice-president, gave an account of his paper, "On the surfaces divisible into squares by their curves of curvature." Sir W. Thomson, Mr. Merrifield, and Prof. Clifford, asked for information on one or two points in the communication.—Mr. S. Roberts, vice-president, gave some details of his paper, "Prof. Cremona's transformation between two planes and tables relating thereto."—Reference was made to a paper by Prof. Cayley. "On the rational transformation between two spaces" (Proceedings Lond. Math. Society, vol. iii. pp. 127, &c.).—Dr. Hirst briefly sketched out a few results arrived at in his communication, entitled "A manifold correspondence of two planes." Sir W. Thomson explained the object of his short paper "On the simultaneous reduction of two prodynamical quadratics to sums of squares." He referred to papers by Prof. Cayley (Camb. and Dub. Math. Jour., Feb. 1869, and Quarterly Math. Jour. 1858), and to Conaby's problem "Sur l'équation à l'aide de laquelle on détermine les inégalités séculaires des planètes," treated of in vol. iv. of that writer's "Exercises." The Hon. J. W. Strutt referred the author to a memoir bearing on the subject of his paper.

Anthropological Institute, June 17.—Sir John Lubbock, Bart., president, in the chair. –Mr. A. W. Franks exhibited and described photographs of the tattooed man from Birmah—The following papers were read : "On the Hill Tribes of North Aracan," by Mr. St. Andrew St. John ; "The Aïnos of Yeso," by Commander H. C. St. John, R.N. (communicated by the Admiralty) ; "Indian Picture Writing in British Guiana," by Mr. Chas. B. Brown ; "Report on Australian Languages and Traditions," by the Rev. W. Ridley, M.A. (communicated by the Colonial Office) ; "Report of the Anthropological Section of the Arctic Exploration Committee."

Linnean Society, June 20.—Mr. G. Bentham, president, in the chair.—Mr. A. W. Bennett communicated a short note on the mode of fertilisation in *Impatiens parviflora*. On the structural peculiarities of the Bell-bird (*Chasmorhyncus*), by Dr. Murie.

Geologists' Association, June 7.—Rev. J. Wiltshire, president, in the chair.—"On the Classification of the Cambrian and Silurian Rocks," by Henry Hicks. The author, after mentioning the groups now known to comprise the Cambrian and Silurian rocks, as exhibited in the British Isles, and the usual mode, hitherto, of dividing and subdividing these formations, stated that it was impossible in a science so progressive as geology, where new discoveries were continually being made, to accept at present any of these arrangements, which for the most part had been made some twenty or thirty years ago, unless with considerable modifications. The classification approved by the author has already been, to a great extent, adopted by Sir Charles Lyell in his "Students' Manual," and by the late Mr. Salter, and the author in papers to the British Association ; and is based on the most recent palæontological and stratigraphical evidence. In a table exhibited for the purpose of illustrating these facts, the classification of Prof. Sedgwick, and of Sir R. Murchison, were placed side by side along with the one proposed. The columns in the table showed (1) the lithological characters of the beds comprising each group ; (2) the thickness of the strata ; (3) the organic remains contained in each group ; (4) the number of genera and species which are known to reach from one group into another ; (5) the order of the appearance of animal life upon the globe, and (6) the localities where the several groups are best seen in England. By means of the evidence set forth in these columns, the author was enabled to show the most natural divisions and subdivisions, so far as recent researches are capable of explaining them. The following are the chief divisions accepted as being the most satisfactory at present :—The *Lower Cambrian* to include the Longmynd (Harlech grits and Llanberris slates, and the rocks at Bay Head, &c.) and the Menevian groups, which were shown to be intimately connected palæontologically, and to be entirely distinct in their faunas from the overlying rocks. The *Upper Cambrian* to include the Lingula flags (lower, middle, and upper, called also Maenturog, Festiniog, and Dolgelly or Malvern) and the Tremadoc groups. These were also shown to be connected closely by some of the genera, especially by Olenus, Conocoryphe, and Dikelocephalus. The *Lower Silurian* to comprise the Arenig (Lower and Upper, the former a series only recently known through the researches of the author, and forming a connecting link between the Tremadocs and the true Arenig rocks), the Llandeilo (Upper and Lower, the former being black shales or slates, and the latter calcareous), and the Bala or Caradoc groups. The *Upper Silurian* to consist of the Llandovery (Upper and Lower), the Wenlock and the Ludlow groups. The whole of the Llandovery group was placed in the Upper Silurian in accordance with the evidence cited by Prof. Ramsay in his memoir on North Wales, along with the facts explained by the table, and which went to prove that when it was to be separated entirely from the other groups, as a Middle Silurian division, this was the most natural and proper position.—"On the Silurian Rocks of the English Lake District," by Prof. Alleyne Nicholson. In this paper the author classified the Silurian rocks of the English Lake District as follows, commencing with the lowest:—(1) The Skiddaw Slates, (2) the Borrowdale Series, or Green Slates and Porphyries, (3) the Coniston Limestone and associated shales, (4) the Graptolitic Mudstones, (5) the Coniston Flags, (6) the Coniston Grits, (7) the Ludlow Rocks. Each of these members of the series was described lithologically and palæontologically, and its geological position discussed, not only with reference to the other beds of the district, but also to the Silurians of Wales and North America.

Society of Biblical Archæology, June 4.—Dr. Birch, F.R.S., president, in the chair. "On a Religious and Political Revolution which took place in Egypt prior to the reign of Rameses III., having a probable connection with the rise of the Jewish religion. From the text of the Harris Papyrus," by Dr. August Eisenlohr. This magnificent Papyrus contains an account of the reign of Rameses III. and the events preceding his accession to the throne. Among these he finds a most marvellous account of a politico-theological revolution made by a Syrian hero, who, after a period of general disorder, made himself chief of the whole country, and abolished the existing religion and the sacrifices then in use. The father of Rameses III., King Seti-nekht, suppressed this revolution and restored the country to its former religious institutions. The striking resemblance of this story with the narrative of the return of the Hykshos, which was extracted by Josephus from Manetho's work, and was held by nearly all authorities to be connected with the establishment of the Jewish religion is very remarkable. Dr. Eisenlohr considered these passages in the Harris Papyrus as representing the Egyptian view of this and other great events which were the immediate cause of the Exodus, in which case the Papyrus would constitute the first Old Egyptian document hitherto discovered to bear upon the subjects treated of in the Book of Exodus. And it is therefore an additional gratification to learn that the Trustees of the British Museum have recommended to the Treasury the purchase of this invaluable document.—"Observations on the Dimensions of the Great Pyramid and the Royal Coffer," by Mr. Solomon M. Drach.—"The XXXVII. Aamu in the Tomb of Chnum-Hotep, at Beni-Hassan, identified with the family of Israel," by the Rev. Daniel H. Haigh. The learned author maintained that the said group, representing 37 Aamu or Mestemmu from the land of Shu, depicted no other than the patriarch Jacob and the thirty-six legitimate members of his family (the offspring of his wives Leah and Rachel), who entered Egypt at Joseph's invitation; the concubines and their children holding a decidedly inferior rank, and regarded as slaves and slave-born, not being counted, reducing the legitimate family of Jacob to that number. Shu he supposed to be the "East;" Mestemmu he compared with Beto-Mestham (Judith iv. 6), in the territory of Dothan, conquered by Jacob (Gen. xlviii, 22). In a supplement to this paper, Mr. Haigh described a Babylonian cylinder brought from Hidah, engraved by Mr. Layard in his "Travels," and translated the cuneiform inscription as representing Terah and his children, Abraham, &c. The names Iscah and Milcah (Queen) he considered might be one name in duplicate, the result of a marginal gloss (one sign in the cuneiform writing representing the sounds *is* and *mil*).

GLASGOW

Geological Society, May 2.—Mr. James Thomson read some notes "On an Undescribed *Platycrinus* from the Mountain Limestone of Fifeshire," which he had found in a quarry to the west of Kirkcaldy. It differs in several respects from M'Coy's *Platycrinus punctatus*. The plates of the test of that author's form are punctate, while those of the form exhibited are smooth and destitute of surface ornamentation. It also differs in the form of the plates.—Mr. Thomson also laid before the Society a curious shell, which he discovered on the same occasion. It was of somewhat large dimensions, being 10 in. long, by 7½ in. in width at the broadest part. At first sight it seemed to be a variety of Nautilus, but he could not find any trace of the septa which characterise that important group of Cephalopoda. He was, however, disposed to view it as belonging to that group, but one which, so far as he was aware, had not been described in any work on Palæontology.—Mr. David Robertson read the following papers:—1. "On the Clay Beds at Kilchattan in Bute." Mr. Robertson gave an enumeration of 86 species which had been obtained from the locality, including 40 species of Mollusca, 16 of Ostracoda, 18 of Forminifera, and 12 of other orders. The prevailing shells of the deposit are *Tellina calcarea*, *Axinus flexuosus*, *Scobricularia prismatica*, *Cyprina islandica*, *Mya truncata*, and *Utriculus obtusus*. 2. "On a Fossiliferous Clay Deposit near Campbeltown." The chief interest of this section is that, contrary to the usual position of the boulder clay in the West of Scotland, here it overlies shell-bearing clay. The latter is dark grey in colour, and contrasts strongly with the overlying boulder clay, which is of a full reddish brown. The shell-bearing clay, as exposed in the bed of a little burn or streamlet in Tangy Glen, about six miles from Campbeltown, is seen standing up in the boulder clay like a little knoll, and has doubtless been brought to that form by abrasion. It can be traced for a distance of 60 or 70 yards; its exact depth could not be ascertained, but as the rock is seen at a short distance on either hand, it is probably not more than a few feet deeper than what is exposed. The boulder clay overlies it to a height of 50 or 60 feet. The latter consists of 50 per cent. of fine mud and 50 per cent. of sand and gravel, while the shell-bearing clay gives 80 per cent. of fine mud and only 20 of sand and gravel. The fossils are but thinly met with in this deposit—molluscs in particular are comparatively rare, the few found being chiefly *Leda pygmæa*, with an occasional *Leda pernula* and a few fragments of other species. Ostracoda and Foraminifera are better represented, 18 species of the former and 26 of the latter having been obtained. A remarkable feature of the Ostracoda in this deposit is that they have much in common with those found in the clays on the east coast of Scotland, which have been held to represent more strongly Arctic types than those generally found in the West. Amongst these are *Cytheropteron Montrosiense*, *Cytheropteron vespertilio*, and *Cytheropteron Sorbyana*. None of these have hitherto been met with in the clays of the West of Scotland, with the exception of one specimen of *C. Montrosiense*, which had been found in the excavations for Messrs. Randolph and Elder's new dock near Govan. This specimen was found at a depth of 18 feet in a lower bed of clay dipping away from the river. An upper bed, which dipped to the river, contained only more recent forms common to our raised beaches and present seas. He might add that *C. vespertilio* and *C. Sorbyana* are common species in the clays of Norway. The chairman observed that this additional discovery of Arctic marine shells below the lower boulder clay of the West of Scotland was a further confirmation of the interesting fact that an Arctic or northern fauna had spread over certain tracts of the existing sea bottom before the lower Till of the country was deposited.

PHILADELPHIA

Academy of Natural Sciences, Oct. 17, 1871.—The president, Dr. Ruschenberger, in the chair. "Remarks on Fossils from Oregon."—Prof. Leidy directed attention to some fossils, part of a collection from Oregon, submitted to his examination by the Rev. Thomas Condon, and indicated in the "Proceedings" of Oct. 18, 1870. One of the fossils, a brain cast, or rather a cast of the interior of the cranium of a large mammal, has about the same form and size as that of the horse. The cerebral hemispheres are nearly as much convoluted as in the latter, and measure about 4¼ inches in length and breadth. It may pertain to a large tapiroid animal, though I suspect it belonged to an oreodont. A large atlas, perhaps belonging to the same animal as the former specimen, measures 5 inches in breadth between the outer prominent borders of the articular concavities for the occipital condyles, and it is about 4½ inches from the neural tubercle to the hypapophysis. It differs in several important points from the atlas of the rhinoceros, horse, ox, &c., and the want of sufficient means of comparison prevents a determination of its near relationship. Another fossil, labelled "Alkali Flats," consists of the greater part of the crown, apparently of a last upper premolar, or perhaps of a transverse pair of lobes of a true molar, of an animal as large as that to which the preceding specimens belonged. The tooth approaches in character the corresponding portion in the oreodonts, but differs in the proportionately less degree of development of the inner lobe of the crown as compared with the outer one, and in the greater degree of development of the inner basal ridge. The crown measures 1⅓ inches in transverse diameter. These fossils appear to indicate an unknown pachyderm, which may be designated by the name of *Hadrohyus supremus*. Among the Oregon fossils there are a number of imperfect remains, of which it was formerly remarked they indicated at least two species of rhinoceros. One of these was thought to be the same as the *R. occidentalis;* the other was suspected to be the same as the Californian species, *R. hesperius.* Some additional specimens indicate the second species to have been intermediate in size to that last named and the *R. crassus* of the Niobrara river. One of the specimens from Bridge Creek, consisting of a mutilated upper jaw fragment, with portions of the fangs of the true molars, shows these to have occupied the space of about 5 inches. An isolated tooth from Alkali Flat, apparently a last upper premolar, probably belongs to the same animal. From the outer part of its crown three folds project into the bottom of the median valley. The tooth measures 1 inch and 10 lines wide. The species may be named *Rhinoceros pacificus.* Another fossil specimen, labelled "Crooked River," consists of an isolated vertebral plate of a large turtle, apparently the eighth bone of the series. It has the same shape as in *Stylemys niobrarensis*, but is proportionately much shorter in relation with its breadth. It measures 2 inches wide, 1 inch 7 lines long, and 7 lines thick. The specimen probably indicates an undescribed species, which may be named *Stylemys oregonensis.* Two additional fossils are brain casts, probably of *Oreodon superbus.* The cerebral hemispheres are 10 inches 8 lines long, and together about 2½ inches broad.

PARIS

Academy of Sciences, June 17.—A note by M. E. Combescure on a point in the theory of surfaces was presented by M. Chasles.—M. E. Roger read a third memoir on the theory of capillary phenomena.—Father Secchi forwarded a reply to the observations recently presented by M. Respighi in opposition to his remarks on some peculiarities in the constitution of the sun.—M. A. Genocchi read a paper on the intensity of the heat of the sun in polar regions, in which he discussed the calculation of the annual mean heat of the sun within the polar circles.—M. C. Martins communicated a note on the stormy nature and unequal distribution of the rains on the surface of the department of Hérault.—M. A. Bérigny forwarded a note describing the effects produced by the striking of a house by lightning at Versailles on the night of June 6.—M. Lartigue presented an explanation of the mistral.—M. H. Sainte-Claire Deville presented a note by M. Laurence on a compound of oxide of tin with anhydrous acetic acid, produced by heating the two substances together in a sealed tube to 302° F. Upon this paper M. Elie de Beaumont made some remarks, in which he put forward the notion that in the early ages of the world nature may have employed a chemistry different from that which we now see in action in volcanoes and in atmospheric phenomena.—M. Sainte-Claire Deville also presented a note by M. G. Saillard on a new phosphoplatinic derivative of toluidine obtained by heating an alcoholic solution of Schützenberger's ether $Ph\ (C^2 H^5 O)\ ^3Pt\ Cl^2$, with an excess of crystallised toluidine.—M. Blanchard communicated a note by M. C. Dareste on the natural affinities of the fishes of the family Balistidæ, which he regards as most nearly allied to the Teuthyidæ.—M. Garrigou presented further observations on the constitution of the Pyrenees in reply to a note by M. Leymerie, and in support of his previous remarks on the same subject; and M. A. Brongniart communicated a note by M. G. de Saporta on a revision of the fossil flora of the gypseous deposits of Aix.

June 24.—M. O. Bonnet communicated a note by M. A. Ribaucour on the theory of lines of curvature.—M. Delaunay presented a note by M. Bresse on the determination of the trajectory of a point for which a certain integral is the minimum.—M. J. Morin read a notice of a new voltaic battery with continuous action, acting by sulphate of copper. This consists of a hollow cylinder of copper, in the centre of which is the cylinder of zinc, he two being separated by a cylinder of filtering paper, and the space between the copper and paper being filled with grit, and that between the paper and the zinc with flowers of sulphur. Batteries of this construction have been in operation for twenty months without being replenished.—M. Pierron de Mondésir forwarded a note on the theoretical value of the relation between the two specific heats of permanent gases.—M. de Saint-Venant presented a note by M. J. Boussinesq on the calculation of the velocity of light in bodies in motion.—M. Delaunay communicated a paper by M. F. Tisserand on movements relative to the surface of the earth.—A note was read by M. T. Schlœsing on the solution of carbonate of lime by carbonic acid, containing the results of series of experiments made by the author on this important subject.—A note by MM. Girard and De Laire on the manufacture of aniline colours, was read.—M P. Champion presented a note on some compounds of paraffin, in which he described an acid, paraffinic acid, with the formula $C^{25} H^{35} NO^{10}$ derived from paraffin by the action of nitrosulphuric acid, and noticed the action of chlorine and bromine upon paraffin.—M. Milne-Edwards presented a note by M. Fischer on the geographical distribution of the podophthalmous crustacea of the Bay of Biscay, in which the author compared this part of the fauna of the Bay with that of the British coast on the one hand, and that of the Mediterranean on the other.—M. C. Bernard presented a further note by M. Oré on M. Liebreich's opinion that strychnine is to be regarded as an antidote to chloral; and a paper by M. Brémond containing an account of some experiments on cutaneous absorption.—M. Duchartre communicated a note by M. Prillieux on the disease of the peach tree known in France under the name of *cloque*, which the author ascribes to the action of a parasitic fungus, described by Tulasne under the name of *Taphrina deformans.*—M. Daubrée presented an examination of the rock-masses of native iron, discovered by Prof. Nordenskjöld in Greenland, of one of which he gives an analysis.—M. Daubrée presented a report on a recent memoir by M. Delesse on the deformations which the strata of France have undergone.—M. de Quatrefages communicated an interesting paper by M. J. de Baye, "On the Prehistoric Caverns of the Marne, belonging to the Neolithic period;" and a second note by M. E. Rivière on the fossil man of the Mentone caves.

BOOKS RECEIVED

ENGLISH.—Concrete Arithmetic: T. H. Orme (Groombridge and Sons).

AMERICAN.—Description of the Balænoptera musculus: T. Dwight, jun., M.D. (Boston Soc. Nat. Hist.).

FOREIGN.—(Through Williams and Norgate.)—Theoretische Maschinenlehre: D. F. Grashof. 1er Band, 1te Lieferung.—Des Préparations microscopiques tirées du régne végétal: Grönland, Cornu, and Rivet.—Lehrbuch der anorganischen Chemie, 3te Abtheilung: Dr. Büchner (Schluss).

DIARY

FRIDAY, JULY 5.

GEOLOGISTS' ASSOCIATION, at 8.—On Corbicula fluminalis, its associates and distribution in Britain: Alfred Bell.—On the Dip of the Chalk of Norfolk, and the Remains of Old Land Surfaces called the "Stone-bed:" Rev. John Gunn, M.A.

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